

## MEDIA REVIEW

### In Reference to Lemurs: A Comprehensive Field Guide and Call to Action on Behalf of the Unique Primates of Madagascar

Review of *Lemurs of Madagascar, 2nd Edition (Conservation International Tropical Field Guide Series)* by Russell A. Mittermeier, William R. Konstant, Frank Hawkins, Edward E. Louis, Olivier Langrand, Jonah Ratsimbazafy, Rodin Rasoloarison, Jörg U. Ganzhorn, Serge Rajaobelina, Ian Tattersall, and David M. Meyers, illustrated by Stephen D. Nash, Washington, DC: Conservation International, 2006, 520p., 237 fig., \$25.00

Madagascar is the highest primate conservation priority in the world. With more endemic plant and animal families than any other biodiversity hotspot, and constant threats to habitats via climate, agriculture, and logging, this island is in a precarious state and in great need of world attention and further protection. Lemurs, endemic to Madagascar and at further risk from hunting, are successful ambassadors, drawing the attraction of policy makers, tourists, and researchers to the distinctiveness and plight of the flora and fauna of the island. As seed dispersers and pollinators, their importance to the various ecosystems that they inhabit cannot be underestimated and makes them excellent “flagship species.” Globally, lemurs represent 30% of all primate families and 11% of all primate species and subspecies. Unfortunately, since humans arrived on the island approximately 2,000 years ago, eight genera and 16 species have gone extinct and today 63% of lemurs are threatened with extinction. With an extraordinary promise in 2003 by President Marc Ravalomanana to triple Madagascar’s protected areas by 2008 (the “Durban Vision”), *Lemurs of Madagascar*’s conservation message and call for poverty-alleviating ecotourism are timely and supportive of this effort.

As stated in the introduction by Peter Seligman, Chairman and CEO of Conservation International, and Russell Mittermeier, President of Conservation International, the goals of *Lemurs of Madagascar* are to “facilitate field identification of lemurs, to summarize available data on their ecology, distribution and conservation status, and to stimulate further interest in the survival of these animals in their natural habitats.” To this end, this book is a success and is sure to be indispensable for lemur novices and experts alike. Since the first edition was published in 1994, several new species have been described and species distributions determined. This new edition is an updated compilation of lemur research with

special attention to the conservation status and threats for extinction of each species, with the addition of ten new species described since the original printing, nine more species and subspecies “resurrected from the literature,” and three *Microcebus* species as yet unnamed.

This book is a collaboration of 11 authors from Europe, Madagascar, and North America, all highly regarded in their fields of expertise with years of experience in studying and protecting lemurs and their habitats. The professional dedication of each of the contributors, including illustrator Stephen Nash, to conservation in particular is impressive. Contributors to the book share affiliations with Conservation International, World Wildlife Fund, The Henry Doorly Zoo’s Center for Conservation and Research, Durrell Wildlife Conservation Trust, International Union for the Conservation of Nature and Natural Resources (IUCN)/Species Survival Commission (SSC) Primate Specialist Group, and Wildlife Preservation Trust International, to name only a few, and this commitment is evident throughout the book.

*Lemurs of Madagascar* is a comprehensive field guide composed of five chapters, which introduce the reader to the history, plight, status, and behavioral ecology of every currently recognized lemur species and subspecies. Chapter 1, *Origin of the Lemurs*, describes briefly the theories of how lemurs came to inhabit Madagascar. This chapter highlights the difficulty of presenting a satisfactory theory accounting for the arrival of lemurs on Madagascar owing to the complete lack of fossils dated before subrecent times. Although this issue remains unresolved, a brief theoretical overview is presented.

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Chapter 2, *Discovery and Study of the Living Lemurs*, is a narrative describing the first lemur sightings using drawings and passages from original documents dating as far back as the early 17th century. It also provides a historical account of both a developing systematic nomenclature and the beginnings of the scientific study of lemur behavioral ecology. This chapter is particularly interesting given the abundance of species discoveries in recent years.

Chapter 3, *The Extinct Lemurs*, is a cautionary tale of what may recur without extensive conservation efforts. The authors provide great visual and written detail of the subfossil lemurs to the extent that they have been described in the scientific literature, and at times including new, as yet unpublished, discoveries. Several genera are skillfully reconstructed in colored plates and a comparison of skulls further enables a quick assessment of the range of sizes and morphologies. Whether your interest is fossils or extant taxa, this chapter is a fascinating look at lemur diversity and primate evolution.

Chapter 4, *Conservation of Lemurs*, begins with a report of figures that place the biodiversity of Madagascar in a global context, and identifies the country as “a world leader” in endemism. Unfortunately, the country also scores for “some of the most dramatic examples of erosion on our planet.” The authors present a thorough account of the histories, processes and legacies of the three main practices threatening lemurs: habitat destruction, hunting, and live capture. After discussing the risk status of lemurs, they close the chapter with a more optimistic vision. They review, and call for, effective conservation activities that may lead to a more hopeful future for Madagascar.

In Chapters 1 through 4, the authors do a commendable job of describing the history of the island and lemurs in particular as well as current impacts on lemur survival. Their treatment of individual subfossil lemur species and the impact of climatic change are especially fascinating. Appendix B addresses Madagascar’s biogeographic regions (see below), however, and to no detriment to the book as it stands, an inclusion of the processes of island biogeography would be a welcome addition. One additional change that might be considered for a future version is an expansion of the section citing captive conservation programs in Chapter 4. The activities of two resources in particular, The Lemur Conservation Foundation and St. Catherines Island, are not described. With authors affiliated with these resources, their insights would be particularly informative.

Chapter 5, *The Living Lemurs*, makes up the bulk of the book and satisfies the authors’ goals to offer an informative and stimulating guide while encouraging further research and conservation ac-

tion. This section is organized taxonomically. Each family is described in general, preceding an in-depth description of each genus, which also notes trends and exceptions within the genus, and justification for the particular taxonomy used. Distribution maps, illustrations of a suite of postures and behaviors, and colored depictions (illustrations and photos) of each species within the genus are also provided. Furthermore, each one of the 71 species and subspecies is explained in remarkable detail, with scientific, English, French, German, and Malagasy names listed. Many of these species-level descriptions are complete with exceptional photos, illustrations, and distribution maps of their own. Illustrations by Stephen Nash, well known for his brilliantly detailed primate drawings and the recipient of the 2004 American Society of Primatologists President’s Award for his contribution to primatology, simultaneously facilitate the identification of species and give the reader an appreciation of the beauty and diversity of lemurs. This chapter, in particular, is an invaluable resource for anyone interested in lemurs.

Within Chapter 5, species descriptions are divided into five sections: *Identification*, *Geographic Range*, *Natural History*, *Conservation Status*, and *Where to See It*. Information in these sections is sufficiently thorough to satisfy the authors’ purpose “to stimulate lemur tourism and to help travelers identify animals observed in the wild.” However, this chapter will also benefit primatologists and conservationists, as it provides a compilation of what is known about each species, citing published data and providing a complete list of bibliographical references.

*Identification* is not limited to general physical descriptions; it includes vocalization patterns, morphometrics, and even a discussion of species with which they are commonly mistaken. Geographic ranges are provided with the caveats that (1) as forests disappear so might the animals, and (2) new discoveries occur frequently. These statements summarize the theme of the book: there is a great urgency if we want to prevent further extinction, and there are great opportunities for adventure and discovery. The colored maps are an excellent resource for anyone planning a research project or just a visit with a specific species in mind. In combination with *Where to See It*, which lists specific sites and modes of transportation, chances for a successful arrival at each site are improved.

*Natural History* summarizes what is known of each species’ behavioral ecology, including estimated population densities and distributions, scent-marking behavior, locomotion, life history, social structure, and diet, and is meant to pique the interest of the reader rather than necessarily help in identification. This section presents a very informative overview in most cases (to no fault of the authors, in some cases very little is known), but more extensive

coverage of all the published literature for every species, a massive and commendable undertaking to say the least, is slated for the next edition. That is not to say that this edition neglects the behavioral ecology of each species. When information is available, the authors are quite successful at synthesizing and conveying the broad range of research that has been conducted.

*Conservation Status* goes beyond listing the International Union for the Conservation of Nature and Natural Resources risk assessment of each species; in this section the authors also discuss specific threats such as hunting and slash-and-burn agriculture, *fadys* (taboos) that may either protect or doom a species, outlooks for the success and persistence of each species in the future, and distributions relative to protected areas. This section is well researched and catered to each species, increasing the likelihood that successful conservation action plans can be conceived and instituted.

Three appendices comprise the final section of the book. *Appendix A: Maps of Madagascar* consists of an atlas including biogeographic regions, floristic domains, topography, rivers, towns, cities, and “key sites for lemur watching.” Protected areas are mapped with currently, and previously, forested areas so that both the drastic deforestation that has plagued Madagascar and the commendable current initiatives to protect the remaining habitat can be visualized in context. *Appendix B: Biogeographic Regions and Floristic Domains of Madagascar* addresses the current diversity of the main Malagasy zones, with information on rainfall, vegetation, and risk to the regions. Finally, *Appendix C: Key Sites for Watching Lemurs* complements the maps and the *Where to See It* section in Chapter 5. For the majority of sites, the inclusion of where to stay, how to get there, and the amount of time required is notable because field guides do not typically offer these details. This book expands on the recommendations of guidebooks by including more of the lesser-known sites and listing lemur species likely (and not-so-likely) to be observed. In some cases, they even mention the number of habituated groups, noteworthy flora and fauna, and the best time and landmarks to see certain species.

As this is meant to be a field guide, colored plates of representative genera for each lemur family

occupy the inside front and back covers and are color coded to match the sections pertaining to those families in the book. This can assist in on-the-fly species identification. A “lemur life-list” checklist is included at the end of the book to promote the healthy competitive spirit of bird watchers, which has resulted in an economic boon wherever bird-watchers go. This phenomenon is creatively illustrated in two tables documenting the economic impact of birding. It is the authors’ hope that primate life-lists will result similarly in a community of primate-watchers and encourage repeat visits to and new adventures in Madagascar. Furthermore, when applicable, each lemur site is referred to by its Malagasy and French names and, as mentioned above, lemur names are listed in several languages, especially those most likely used by researchers and tourists.

One limitation of the book is that the text lacks reference to several of the figures. For the most part such figures are self-explanatory, but reference to them in the text would augment their utility. Although the book is laid out in an easy-to-use format with no shortage of easy-to-find information, a future version including a review of all research performed on each species would also benefit from a subject index.

Notwithstanding these minor details, this is the most comprehensive and well-researched book of its kind available for lemurs. The authors of *Lemurs of Madagascar, 2nd Edition*, are true advocates of lemur conservation and have produced an immeasurably useful and informative resource for people at all levels and with various interests—from the budding to the seasoned primatologists, conservation biologists, naturalists, tourists, or legislators. Conservation sits at the crossroads of these realms; as the authors stress throughout the book, continuing the increasing momentum of ecotourism, research, and legal protection of habitats is essential for the survival and conservation of lemurs and their environments. By increasing tourism and consequently economic incentives for local people, it is their hope that this book will impart a sense of the importance of these protected areas to those who live nearby. This edition of the *Lemurs of Madagascar* is capable of equipping us with the basic foundation that is necessary to develop strong conservation action plans.

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